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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,971	10/13/2005	Arild Vik	7439P001	7621

7590 11/08/2010  
DIEDERIKS & WHITELOW, PLC  
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Woodbridge, VA 22193-7932

EXAMINER
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BEST, ZACHARY P

ART UNIT	PAPER NUMBER
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1727

MAIL DATE	DELIVERY MODE
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11/08/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/527,971	<b>Applicant(s)</b> VIK ET AL.	
	<b>Examiner</b> Zachary Best	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,32-39 and 41-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,32-39 and 41-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

**POWER GENERATION APPARATUS COMPRISING FUEL CELL AND  
REFORMING MODULE**

Examiner: Z. Best    S.N. 10/527,971    Art Unit: 1727

***Continued Examination Under 37 CFR 1.114***

1.     A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 27, 2010 has been entered. Claim 1 was amended. Claims 41-51 were newly added. Claims 1, 32-39, and 41-51 are currently pending examination.

2.     The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

3.     The claim rejections under 35 U.S.C. 103(a) of Claims 1 and 32-39 as being unpatentable over Demissie et al. in view of Yokota are withdrawn because Claim 1 was amended.

4. Claims 1, 32, 34-39, 41-43, 45-46, and 48-51 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. (US 2002/0006537 A1) in view of Yokota (US 2002/0085967 A1).

Regarding Claims 1, 35-36, and 48, Kobayashi et al. teach a power generation apparatus (FCS) comprising a fuel cell (1) including an anode (1d); a reforming module, wherein the reforming module is adapted to reform hydrocarbon fuel into hydrogen (par. 87), the apparatus being arranged so that said hydrogen is fed from the reforming module to the anode of the fuel cell (fig. 1); a recycling arrangement to recycle hydrogen in an outflow stream of the anode of the fuel cell back to the anode (par. 51, fig. 1); and a controlling arrangement to control the amount of hydrogen recycled and to tap off, externally of the power generation apparatus, hydrogen that is not recycled (par. 52). It is Examiner's position that the intended use for the tapped off hydrogen has no patentable weight in the claimed power generation apparatus. Intended use of a known product does not give it patentable weight in the product claim. See MPEP 2106(C). However, Kobayashi et al. do not teach said reforming module is configured to separate said hydrogen from said other components.

Yokota teaches a process and apparatus for generating hydrogen and carbon dioxide, which may be used for a fuel cell (pars. 2, 7, and 59), wherein carbon dioxide is absorbed in to a form of metal carbonates (par. 63) in order to remove carbon dioxide from the hydrogen stream (par. 39). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to create the electrical current generating

system of Kobayashi et al. having the apparatus of Yokota wherein carbon dioxide is absorbed in to a form of metal carbonates because Yokota teaches it can remove carbon dioxide from the hydrogen stream.

Regarding Claims 32, Kobayashi et al teaches substantially nothing except hydrogen is fed to the anode of the fuel cell (par. 87).

Regarding Claims 34 and 37, Yokota teaches a desorption module adapted to allow the release of carbon dioxide (par. 44).

Regarding Claim 38, Kobayashi et al. suggest the reforming module is thermally integrated with the fuel cell (pars. 6 and 87).

Regarding Claim 39, Yokota teaches the desorption module is thermally integrated with the fuel cell (par. 72).

Regarding Claims 41-43, 45-46, and 49-51, Kobayashi et al. teach the recycling arrangement includes a recycle path connecting an outlet of the fuel cell to an inlet of the fuel cell and a three-way valve is fluidly connected in the recycle path between the outlet and the inlet (34, fig. 1).

5. Claims 33, 44, and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi et al. and Yokota, as applied to Claims 1, 32, 34-39, 41-43, 45-46, and 48-51, and further in view of Keefer et al. (US 2002/0142208 A1).

Regarding Claims 33, 44, and 47, Kobayashi et al. and Yokota teach a power generation apparatus as recited above. However, Kobayashi et al. and Yokota fail to teach a removal arrangement to remove water from the outflow stream of the anode of the fuel cell.

Keefer et al. teach a power generation apparatus comprising a fuel fuel (502) comprising an anode loop (par. 87), wherein a fraction of recirculated anode gas is diverted through a condenser (595) to prevent undesirable accumulation of water vapor as the product of the fuel cell reaction (par. 114). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the condensing means of Keefer et al. in the power generation apparatus of Kobayashi et al. and Yokota because Keefer et al. teach the condensing means will prevent undesirable accumulation of water vapor as the product of the fuel cell reaction.

### ***Response to Arguments***

6. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary Best whose telephone number is (571) 270-3963. The examiner can normally be reached on Monday to Thursday, 7:30 - 5:00 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571) 272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zachary Best/  
Examiner, Art Unit 1727

/Dah-Wei D. Yuan/  
Supervisory Patent Examiner, Art Unit 1727